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ABSTRACT

This document presents 22 tools that were developed for use in a five-module training package to assist employment and training service providers comply with the Workforce Investment Act of 1998 and develop a one-stop training and employment services system. Each tool addresses a different aspect of the process of developing a one-stop delivery system and is referred to in one or more of the five training package modules. Each tool description contains the following elements: a statement of the tool's purpose; information about when the tool should be applied; an overview of the tool's usefulness; helpful hints for using the tool; a summary of how the tool was used in the modules; and a listing of related resources. The 22 tools/techniques are as follows: the activity network diagram; the affinity diagram; brainstorming; building consensus; building a glossary of terms; the cause-and-effect diagram; the column flow chart; the correlation chart; data displays; dot voting methods; the fishbone chart; the Gantt chart; the interrelationship diagraph; the nominal group technique; the Pareto chart; the prioritization matrix; the process flow chart; process mapping; process task spreadsheets; the radar chart; the scatter diagram; and service mapping. (MN)

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Partnering for Quality under the Workforce Investment Act: A Tool Kit for One-Stop System Building

Summary of Tools

Deborah Kogan, Vinz Koller, Richalene Kozumplik, and Mary Ann Lawrence

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Partnering for Quality under the Workforce Investment Act:

A Tool Kit for One-Stop System Building

July 1999

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Partnering for Quality under the Workforce Investment Act:
A Tool Kit for One-Stop System Building

SUMMARY OF TOOLS

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SECTION 6. SUMMARY OF TOOLS, TECHNIQUES, AND RESOURCES

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Tool or Technique	Referred to in Module(s)	Page
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This toolkit summarizes a number of the different tools and techniques described in Curriculum Modules 1 through 5. In the profile for each of the tools listed above, we summarize:

- The purpose of the tool.
- When the tool should be applied.
- An overview of its usefulness.
- Helpful hints about how to use it.
- A summary of how it was used in the curriculum modules.
- A listing of related resources.

I. SELECTED BIBLIOGRAPHY

Below we have listed several of the books from which we have drawn heavily in developing the materials in the Partnering Curriculum, particularly modules 3, 4, and 5. We acknowledge our debt to these works and encourage others to consult them as first-hand resources. We think you will find them valuable, whether you are a trainer or a practitioner.

1. Brassard, Michael, and Diane Ritter, *Memory Jogger II, A Pocket Guide of Tools for Continuous Improvement and Effective Planning*, Goal/QPC. For ordering information contact:

   Goal/QPC
   13 Branch Street
   Methuen, MA 01844-1953
   1-800-643-4316

2. Delthier, Brock, editor, *Waste Chasers, A Pocket Companion to Quality and Productivity*. Compiled by the staff of Conway Quality, Inc., coordinated by Lawrence C. Hornor and Curtis King. For ordering information contact:

   Conway Quality, Inc.
   15 Trafalgar Square
   Nashua, NH 03063
   1-800-359-0099

3. Montgomery, William L., Ph.D., *Power Up Teams and Tools, For Process Improvement and Problem Solving*. Published by The Montgomery Group, P. O. Box 41, Pittstown, NJ 08867, 1-908-479-6673.

4. *Simply Better!* products supported by the U.S. Department of Labor, Employment and Training Administration, including:

   - *Self-Assessment System*, which includes modules on each of the Malcolm Baldrige National Quality Award dimensions:
     - Customer and Market Focus
     - Leadership
     - Strategic Planning
     - Human Resource Development and Management
     - Information and Analysis

  - Process Management
  - Business Results
  - Guidebook

- *Service by Design*, which covers how to involve front-line staff in implementing quality improvement approaches that involve front-line staff, and includes:
  - Overview
  - Guidebook
  - Designer's Workbook

- *Voice of the Customer*, which talks about the importance of learning what customers really think and suggests ways to collect, analyze, and use customer information.
- *Measuring Success in Workforce Development Programs*, which examines the various measures that can be used to evaluate the performance of workforce development systems.
- *Customers in Focus*, A Guide to Conducting and Planning Focus Groups.
- Case Studies in Quality.

Simply Better! products can be received free from the Regional Offices of the U.S. Department of Labor's Employment and Training system. Contact the Philadelphia Regional Office at 1-215-596-6353; the Seattle Regional Office at 1-206-553-7700; or the national office at 1-202-219-5229. Products can also be downloaded from the Simply Better! Web site at (www.simplybetter.org).

II. SUMMARY OF TOOLS

Activity Network Diagram
(Also Known as Gantt Chart)

Purpose of the Tool

To schedule sequential and simultaneous tasks.

When the Tool Should be Applied

- To determine a realistic and efficient schedule for completing a project.
- To show a project's total completion time and the activities' timelines within that project.
- To identify tasks to be done simultaneously and sequentially.
- To identify critical tasks to monitor.

Usefulness of the Tool

- To help team members see how the tasks fit into the whole.
- To identify and correct unrealistic timelines.
- To identify and shorten bottlenecks.
- To focus on the critical tasks.

Helpful Hints in Using the Tool

1. Brainstorm all the tasks within the complete project.
2. Record tasks on cards or post-it notes.
3. Find the first tasks to be completed and place the card/post-it on the far left side of the work surface.
4. Identify other tasks that can be done simultaneously and place that card/post-it directly above or under the first card/post-it.

5. Determine the next task(s) that need to be done and place the card/post-it next to the original ones in order.
6. Repeat steps 4 and 5 until all cards/post-its have been placed in sequence.
7. Number each task , draw connecting arrows and determine realistic completion timeframes for each.

Summary of How Used in Curriculum

In Module 5, we point out that this tool is often used to develop a solution to performance problems selected for attention, after root causes have been identified.

Related Resources

The Memory Jogger II, by Brassard and Ritter

Affinity Diagram

Purpose of the Tool

- To gather and group/organize a large volume of ideas—this tool helps to manage ideas.
- To generate ideas for input into a planning process.

When the Tool Should be Applied

- To identify issues/problems.
- To identify possible solutions.

Usefulness of the Tool

- Encourages creativity by all team members.
- Overcomes team paralysis brought on by an overwhelming array of options and lack of consensus.
- Sorts/organizes a large amount of random information quickly, without loosing its integrity.
- Unlike normal brainstorming, all ideas are used.
- Builds consensus and ownership.
- Makes logic and sequencing visible.
- Encourages non-traditional connections among ideas/issues.

Helpful Hints in Using the Tool

1. Set a time limit for the activity, usually 10 to 20 minutes.
2. State the issue in general terms. Keep the written description short (1 to 3 words).
3. Individually brainstorm and record ideas on cards or post-it notes. Write one idea per note card.
4. Without talking, randomly post the ideas on a wall/flipchart/table.
5. Without talking, collectively sort the ideas in categories/groupings. Make duplicates of ideas as necessary to put into several groupings.
6. Collectively, talking among the team, finalize the groupings.
7. Using consensus, develop header/theme cards for each of the groupings/categories. Place at top of grouping and place star or box around header to distinguish it form the ideas.

8. Review the affinity. Sequence the groupings/categories as necessary.
9. Determine next steps.

Summary of How Used in Curriculum

In Module 4, an affinity diagram is used to identify common products and services across partners.

In Module 5, we describe an affinity diagram as a tool used to (1) *select problems* to address during the planning phase of the continuous improvement cycle; (2) *describe various causes* of the selected problem and identify *the root cause* during the planning phase; and (3) *reflect and act* on feedback gathered after a system has been changed.

Related Resources

The Memory Jogger II, by Brassard and Ritter

Waste Chaser, by Conway Quality, Inc.

Brainstorming

Purpose of the Tool

- To create a high volume of bigger and better ideas that are free of criticism and judgment.
- To use these ideas as input into a planning process.

When the Tool Should be Applied

- To identify issues/problems.
- To identify possible solutions.

Usefulness of the Tool

- To help the team when it is stuck in the "old way of thinking."
- To ensure all members participate in the generation of ideas.
- Allows members to build on others' ideas while staying focused on the team mission.

Helpful Hints in Using the Tool

1. *This is a group activity.*
   - Set a time limit for the activity usually 15–30 minutes.
   - Identify a recorder to get ideas on flipchart.
2. *Review ground rules.*
   - Clearly state the idea to be brainstormed.
   - Brainstorm individually (write down ideas silently).
3. *Group brainstorm.*
   - Record all ideas accurately—don't edit what is said.
   - No criticizing or commenting. There are no bad or wrong ideas.
   - No idea is too wild. Go for quantity of ideas that will be narrowed down later.
   - Piggy-back on others' ideas.
4. *Review each idea.*
   - For understanding and clarification.
   - To combine and eliminate.

5. *Types of brainstorming—freewheeling.*
   - Ideas are shouted out.
   - Make sure everyone has had an opportunity to participate.
   - Make a "last call" for ideas before finishing.
6. *Types of brainstorming—round robin.*
   - Everyone takes a turn offering an idea.
   - Anyone can pass on any turn.
   - Continue until there are no more ideas.
   - All ideas are listed as they are provided.

Summary of How Used in Curriculum

In Module 2, brainstorming is used by small groups to decide what they want to know about other agencies and to design questions that will address these issues.

In Module 3, we say that brainstorming can be used by small groups to generate possible root causes of performance problems.

In Module 4, brainstorming is used to generate a list of needs and challenges that arise from comparing current products and services to customer needs and requirements.

In Module 5, brainstorming is described as a tool that is often used to *reflect and act* on feedback gathered after a system has been changed.

Related Resources

The Memory Jogger II, by Brassard and Ritter.

Waste Chaser, by Conway Quality, Inc.

Building Consensus

Purpose of the Tool

- Generate full discussion of different perspectives on complex issues
  - To understand the points of view of all partners.
  - To make it possible for everyone to support a group decision.

When the Tool Should be Applied

- When you want to avoid the traditional pattern of voting: some "win" and some "lose."

Usefulness of the Tool

- Makes it possible for people with varying needs and interests to make decisions that are good for the group as a whole and that each partner can "live with."
- Everyone is more likely to feel committed to a decision and to honor it if it was arrived at through a consensus decision-making process.

Helpful Hints in Using the Tool

1. Allow full discussion of all sides of an issue.
2. At varying points during the discussion, test the extent of agreement among partners by calling for "a show of thumbs."
   - Thumb up = individual can support a decision, even if it is not his/her first choice.
   - Thumb sideways = individual still has some questions or concerns about the decision but can live with it if necessary.
   - Thumb down = individual does not agree with decision and cannot support it.
3. Every individual that has a thumb down or sideways must state their concern, question, or reason for not supporting the decision.
4. Supporters have an opportunity to try to address the stated concerns.
5. Once everyone has exhausted their concerns and supporters have addressed them, another call for "a show of thumbs" is made.

6. Consensus has been reached if all thumbs are up or sideways.

Summary of How Used in Curriculum

In Module 2, consensus building is described an essential part of the process of building agreement about a common set of service terms and definitions.

In Module 4, consensus is essential to the process of system reengineering because each partner must be able to support the collaborative system of services decided on by all the partners.

Building a Glossary of Terms

Purpose of the Technique

- Document how different programs currently use service-related terms.
- Prepare to develop a common set of service terms and shared definitions for use among One-Stop partners.

When the Tool Should be Applied

- During early discussions about building an integrated system.

Usefulness of the Tool

- Shows how One-Stop partners use different terms for similar processes.
- Shows how One-Stop partners use the same terms for different processes.
- Prevents misunderstandings by providing a guide for "translating" or "crosswalking" between the terminology of two different programs.

Helpful Hints in Using the Tool

1. Document the important service-related terms for each program.
2. Define the term as it is used by the subject program.
3. State how each term is used in that program and what the significance of the term is (e.g., references in laws or regulations to that term or concept).
4. Include words that refer to: (1) service elements or components provided under a given program or funding stream; (2) how volume or duration of each service is measured; (3) service status—such as enrollment, completion, termination; and (4) overall project or individual participant outcomes (successful/unsuccessful).

Summary of How Used in Curriculum

In Module 2, we provide examples of how local One-Stop partners develop service glossaries before negotiating a collaborative approach to the delivery of customer services.

Cause and Effect Diagram (Also Known as Fishbone Diagram)

Purpose of the Tool

- Use to find and cure root *causes* not symptoms.

When the Tool Should be Applied

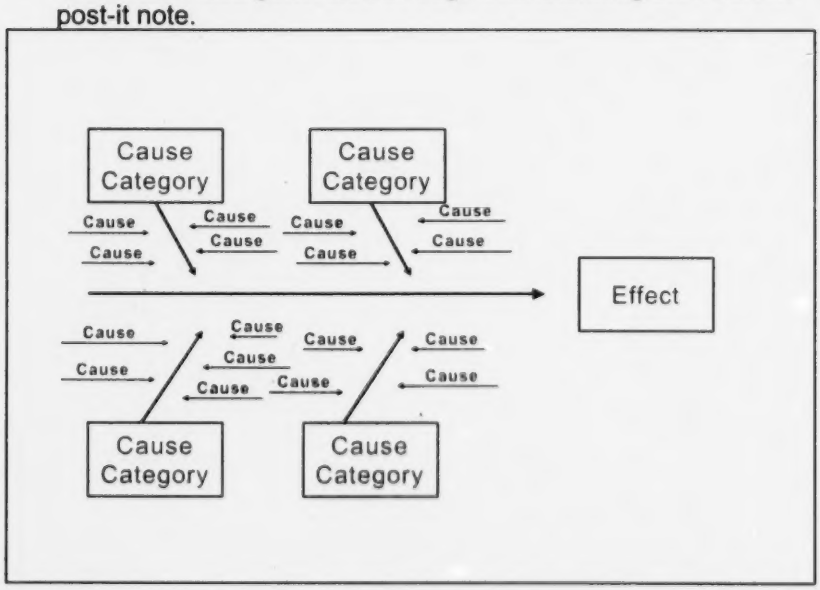
- To generate and group ideas.
- To decide what process needs attention from continuous improvement team.

Usefulness of the Tool

- Enables a team to focus on the content of the problem rather than the history of the problem.
- Focuses the team on potential causes instead of symptoms.
- Creates a snapshot of the collective knowledge of the team around the problem which builds support for the resulting solution(s).

Helpful Hints in Using the Tool

1. Clearly define the effect for which you are trying to identify the cause.
2. Gather people who have knowledge about the effect to be studied.
3. Brainstorm ideas about the possible causes for the effect (issue). Place each idea generated through brainstorming on a card or post-it note.



4. Draw a chart that looks like a fishbone. (See above.)
   - Place the effect on the right side of the diagram.
   - Draw major cause categories or steps in the production process and connect them to the backbone of the fishbone chart. Identify the four main causes. The four main branches (causes) in a production process are usually categorized as *people*, *materials*, *methods*, and *machines*. The four main branches (causes) in a service process are often identified as *policies*, *procedures*, *physical plant*, and *people*.
   - There is no perfect set or number of categories—make them fit the problem you are working on. Place each post-it note with an identified cause on one of the branches/sub-branches of the fishbone.
   - Ask repeatedly of each major cause: "What is causing this cause?"
   - For each of the causes listed on the bone ask "Why does this happen?" List those sub-causes.
5. Review the causes by looking for those that, if addressed, may have the greatest impact.
6. Gather data to determine the relative frequency of the potential root causes.
7. Review the gathered data to determine which potential causes a continuous improvement team will address.

Summary of How Used in Curriculum

In Module 5, a fishbone diagram is used by small groups as one of the tools to analyze the causes affecting the results of a "tossing process."

Related Resources

Column Flow Chart
(See Also Process Flow Chart)

Purpose of the Tool

To picture how different agencies or departments contribute to the flow or sequence of events in a process.

When the Tool Should be Applied

- To identify different agencies' roles in a process.
- To analyze and standardize a process.
- To identify waste in the process.
- To plan improvements in the process.

Usefulness of the Tool

- Clarifies the roles and accountability of various agencies or departments and shows how they are interdependent.
- Shows unexpected complexity, problem areas, redundancy, unnecessary loops, non-value-added work.
- Compares and contrasts the actual versus the ideal flow in order to identify improvement opportunities.
- Serves as a training aid to understand the complete process.
- Allows the team to agree on the steps and determine where improvements can be made that will impact on performance.

Helpful Hints in Using the Tool

1. Determine the frame or boundaries of the process—where does the process start and stop, how detailed will we get?
2. Determine the steps in the process.
3. Sequence the steps.
4. List the various agencies or departments as columns at the topic of the page. Draw the flowchart under these columns using the appropriate symbols. (See Flow Chart)
5. Test the flowchart for completeness.
6. Finalize the flowchart.

Summary of How Used in Curriculum

In Module 5, we describe that column flow charts are often used during the "Plan" step of continuous improvement to describe the process flow, particularly when multiple partners or departments all play a role in an inter-related process.

Related Resources

The Memory Jogger II, by Brassard and Ritter

Waste Chaser, by Conway Quality, Inc.

Data Displays

Purpose of the Tool

To depict data visually in a meaningful way.

When the Tool Should be Applied

- To select problem/process.
- To describe various causes.
- To implement solutions.
- To evaluate solutions.
- To reflect and act on the learning.

Usefulness of the Tool

- Turns data into information, information into understanding, understanding into knowledge, and knowledge into wisdom.

Helpful Hints in Using the Tool

Data displays can take various forms. There are three basic types:

- Pie charts.
- X-Y axis displays (Pareto diagram, histogram, bar charts, trend over time, control charts, scatter diagrams).
- Radar charts.

Each type has its own unique creation method. See specific topics in the toolkit for further details on several of these types (e.g., Pareto diagrams, scatter diagrams, radar diagrams).

Summary of How Used in Curriculum

Throughout Module 5, we describe how data displays can help display data and support decision making during the various steps in the Plan-Do-Check-Act cycle. For example, during the "Check" step, data displays are used to evaluate whether the selected strategy had the desired effect.

Related Resources

Power Up Teams and Tools, by William Montgomery, Ph.D.

Dot Voting Methods

Purpose of the Tool

Used to rank order items on a list.

When the Tool Should be Applied

To prioritize lists of topics, goals, or strategies.

Usefulness of the Tool

- Allows for the individual ranking of issues.
- Easily incorporates input from all participants, even if the group is large.
- Provides equal participation within the process—builds commitment.
- Ensures all team members have an equal voice.

Helpful Hints in Using the Tool

1. Dot voting is a group activity.
2. Each participant gets five colored dots with adhesive backing.
3. If the number of choices is small, the number of votes to be cast by each participant can be reduced.
4. If there are a very large number of items to choose among, it is sometimes useful to cluster the items using an affinity diagram prior to voting.
5. Each person gets to distribute his/her dots among the items that he/she thinks are the most important or most immediate. If one item seems of overwhelming importance, an individual may cast all his/her votes for that item.
6. Usually allow five to ten minutes for voting, depending on the size of the group.

Summary of How Used in Curriculum

In Module 4, dot voting is used to identify the highest priority customer needs and challenges that they want to address in reengineering customer services.

Interrelationship Diagraph

Purpose of the Tool

- To find and describe the cause and effect relationship(s) among the various potential root causes of an issue.

When the Tool Should be Applied

- To identify, analyze and classify the cause/effect relationships.
- To ensure that the key drivers/outcomes shape effective solutions to the issue.

Usefulness of the Tool

- Encourages multiple direction thinking instead of just linear thinking.
- Explores cause/effect relationships among ALL the causes.
- Identifies the key potential root causes naturally.
- Can pinpoint reasons for disagreements among teams.
- Allows for potential root cause identification without credible data.

Helpful Hints in Using the Tool

1. Select a problem statement.
2. Ensure team has adequate knowledge of the issue.
3. Present and arrange cause/idea cards in a large circle pattern, leaving space between for arrows. Use bold print on the cards. Number each card.
4. Choose one idea as the starting point. Taking that point, determine if there is a causal relationship. If not move on to comparing the first idea with the third idea and so on. If there is a relationship between the first and second idea, draw an arrow away from the stronger one with the arrow head towards the weaker one. Move on to the next comparison and repeat until all ideas have been compared to each other.
5. Tally/record on the card the number of outgoing and incoming arrows for each idea.
6. Find the item(s) with the highest number of outgoing arrows. These usually are the ideas that may be the root cause or driver. This is generally the idea to tackle first.

7. Find the item(s) with the highest number of incoming arrows. These are usually the items that are key outcomes. These items can be used as meaningful measures of success.
8. Double box the items that are the key drivers and key outcomes.

Summary of How Used in Curriculum

In Module 5, we indicate that the Interrationalship Diagraph is often used during the "Plan" step of the continuous improvement process to identify the root causes of a problem.

Related Resources

The Memory Jogger II, by Brassard and Ritter

Nominal Group Technique

Purpose of the Tool

A tool that uses the opinions of all group members to establish a rank-ordered listing of group priorities on a set of given issues.

When the Tool Should be Applied

To help a team identify the team's priorities.

To support a consensus-building process around team priorities.

Usefulness of the Tool

- Provides equal participation within the process—builds commitment.
- Allows for the individual/quiet ranking of issues.
- Ensures all team members have an equal voice.
- Exposes the items that cause disagreement.

Helpful Hints in Using the Tool

1. Generate list of items on flipchart.
2. Clarify meanings.
3. Eliminate duplicates.
4. Record the final list as refined—assign letters to each item.
5. Have each team member individually/silently rank order each item.
5. Combine the rankings of all team members and utilize the scores to rank order each item.
6. Discuss the preliminary vote.
7. Take a final vote.

Summary of How Used in Curriculum

In Module 2, we show how the Nominal Group Technique can be used to help make decisions with a team that has diverse members.

Related Resources

The Memory Jogger II, by Brassard and Ritter

Pareto Chart

Purpose of the Tool

To rank order key problem areas, root causes, opportunities.

When the Tool Should be Applied

- To focus on the problems that offer the greatest opportunity for improvement.
- To understand the relative frequency of errors.
- To evaluate improvements/progress made.

Usefulness of the Tool

- It quickly and simply visually displays the relative importance of problems/causes.
- Helps the team to choose the item with the greatest impact as the focus for continuous improvement efforts.

Helpful Hints in Using the Tool

1. Choose a problem to explore.
2. Choose the causes that will be monitored/compared/rank ordered.
3. Choose the most meaningful unit of measurement for each cause (cost, frequency).
4. Choose the time period for study.
5. Gather data for each cause category.
6. Compare the causes using the meaningful unit of measure for each (cost, frequency).
7. Create the chart—list the causes (in descending value) along the horizontal axis and create a bar above each cause up to its measurement (in the agreed upon units) on the vertical axis.
8. Focus most attention on the causes that have the highest values for the selected problem.

Summary of How Used in Curriculum

In Module 5 you will use Pareto Charts to help assess the relative importance of different causes influencing the process selected for small group practice (tossing an objective among members of the group).

Related Resources

The Memory Jogger II, by Brassard and Ritter

Prioritization Matrix

Purpose of the Tool

- Allow the team to understand the facts that led to select one item to pursue among many.
- Helps the team weigh their options.

When the Tool Should be Applied

- To help a team make a decision when there are multiple criteria to apply to multiple options.
- To select a particular problem.
- To select a particular change to a process.

Usefulness of the Tool

- Focuses the team on choosing the best option instead of trying to do all options.
- Forces the team to establish criteria to choose among the options.
- Resolves basic disagreements at the beginning.
- Reduces bias in choosing among the options.

Helpful Hints in Using the Tool

1. List the items to be evaluated in the first column.
2. Select the criteria against which the items will be evaluated. List the criteria in separate columns along the top.
3. Determine the rating scale for each criterion.
4. Determine the relative weight for each criterion.
5. Rate each item against each criterion and multiply by each weight. Put score in each column.
6. Total each item's scores.
7. Use a Pareto chart to display the results and identify the item of highest priority.

Summary of How Used in Curriculum

In Module 5, we indicate that a prioritization matrix is often used to compare different possible solutions to a problem and select the most promising one for piloting and/or implementation.

Related Resources

The Memory Jogger II, by Brassard and Ritter

Waste Chaser, by Conway Quality, Inc.

Process Mapping (Includes Process Task Spreadsheet and Process Flow Chart)

Purpose of the Tool

- To describe a process in detail, including both the major tasks and the subtasks and how they fit together.

When the Tool Should be Applied

- To prepare for reengineering or improving a selected process.
- The *Process Task Spreadsheet* is the road map for completing a flow chart.
- The *Process Flow Chart* provides a graphic depiction of how a process actually works.

Usefulness of the Tool

- Identifies the different steps needed to complete a process and shows how these steps are interrelated.
- Distinguishes between *action steps* involved with a process and *decision points*. Shows at what point key decisions need to be made.
- Can be used to identify non-value-added steps or steps that might be completed more efficiently.

Helpful Hints in Using the Tool

Process mapping is a two-stage process.

- During the first stage, you develop a Process Task Spreadsheet.
- During the second stage you convert the information on the spreadsheet into a process flow chart.

Stage 1. Develop a Process Task Spreadsheet

1. List the major process steps in a spreadsheet format.
2. List the subtasks or decisions needed for each of the major steps.
3. Ask team members questions along the way to help capture necessary steps.
   - What really happens next?

- Is there a decision needed before or after this task?
- Are we missing anything?

4. Enter the appropriate flow chart symbol on the far right of the form, as noted below and on sample spreadsheet.

Elongated Circle

Shows the starting and ending points of a process.

Rectangle Box

Shows a task or action step.

Diamond

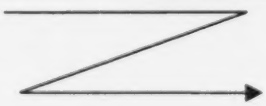
Shows a decision point. Must contain a question that can be answered "yes" or "no."

Process Task Spreadsheet

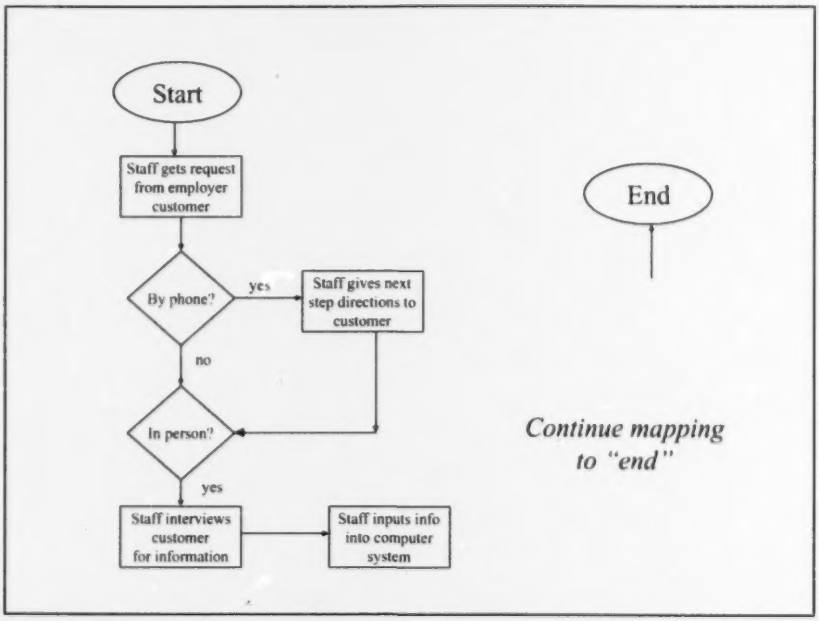
Task #	Major Process Tasks	Subtasks/Decisions	Symbols
1	Staff gets request from customer		▭
2		By phone?	◇
3		Staff gives next step directions to customer	▭
4		In person?	◇
5		Staff gives customer application form	▭
6	Customer completes application		▭

Stage 2. Complete a Process Flow Chart

1. Take the information from the Process Task Spreadsheet and display it using the following flow chart conventions, in addition to the symbols used in the spreadsheet to denote the process starting and ending points (oval), task or action steps (rectangle), and decision point (diamond).

	Connector A small circle with a letter is used to connect one task of a flow chart to another.
	Document A transfer or output of a hard copy document.
	**Zigzag Arrow** An electronic data transfer.
	Straight Arrow Shows the direction of a process flow.

2. Here is an example of what a completed Process Flow Chart will look like.



Summary of How Used in Curriculum

Process mapping is used in Module 4 to document an existing customer service function across partners and to present a redesigned customer flow for the selected function. Initially, small groups use basic process mapping to document the existing process. These flow charts include all steps involving either staff or customers. To present the redesigned customer services, a second type of process flow chart is used that includes only those steps customers themselves must take to reach their desired outcome.

Radar Chart

Purpose of the Tool

- To visually compare the gaps between current and ideal performance for a number of different performance areas.

When the Tool Should be Applied

- As a step before detailed planning of "what" to improve and "how" to improve it.

Usefulness of the Tool

- Visibly displays strengths and weaknesses.
- Clearly displays the important performance categories.
- Clearly displays ideal performance for all categories.

Helpful Hints in Using the Tool

1. Select 5 to 10 rating categories.
2. Draw a large wheel on a flipchart with as many spokes as there are categories.
3. Place the category names on the outside of the circle perimeter along each spoke.
4. Mark each spoke on a zero to "n" scale with the "0" at the center and the highest number on the scale (n) equal to full performance.
5. Have each individual score each category in terms of current performance (from 0 to n). Note the different ratings for each category on the flipchart as they are mentioned. Through a consensus building process, arrive at a team rating for each category.
6. Connect the team rating scores from spoke to spoke. Shade the radar pattern.
7. The shaded portion is the achieved performance. The white area represents the amount of improvement necessary to reach the "ideal" for each category.

Summary of How Used in Curriculum

In Module 5, we point out that radar charts are often used to review progress at the end of a continuous improvement cycle to determine whether to stabilize the system at its current level or initiate new changes.

Related Resources

The Memory Jogger II, by Brassard and Ritter

Power Up Teams and Tools, by William Montgomery, Ph.D.

Scatter Diagram
(Also Known as Correlation Chart)

Purpose of the Tool

To show the relationship between variables.

When the Tool Should be Applied

To test for the relationship of two variables and the strength of that relationship.

Usefulness of the Tool

- Confirms that there is a relationship between two variables.
- Tests the strength of that relationship.
- Provides further evidence to validate relationships identified in a Cause and Effect Diagram.
- Shows the effect that changing one variable in a process will have on another variable.

Helpful Hints in Using the Tool

1. Collect 50-100 paired samples of data the team believes to be related.
2. Prepare a data sheet.
3. Prepare a chart with a vertical and horizontal axis.
4. Plot each data pair with the expected cause on the horizontal axis and the effect on the vertical axis. If data points are duplicated, circle that point as many times as necessary.
5. The closer the chart is to a straight line, the stronger the relationship, and, the greater the likelihood that a change in one will effect a change in the other variable.

Summary of How Used in Curriculum

In Module 5, you will practice using scatter diagrams in small groups to analyze a process.

Related Resources

The Memory Jogger II, by Brassard and Ritter

Waste Chaser, by Conway Quality, Inc.

Power Up Teams and Tools, by William Montgomery, Ph.D.

Service Mapping

Purpose of the Tool

- To inventory all available services provided by core partners in selected service categories.
- To document the amounts and sources of funding invested in each service.

When the Tool Should be Applied

- When a variety of departments, agencies, and programs with customers in common offer similar or overlapping services.

Usefulness of the Tool

- Identifies the extent of overlap in services provided by multiple partners.
- Provides a framework for negotiation about collaboration on system redesign.
- Identifies the current capabilities and strengths of each partner.
- At a minimum, identifies opportunities for coordinated information sharing and customer referrals.

Helpful Hints in Using the Tool

1. Agree on a set of service elements or components to use for the service mapping process.
2. Agree on what agencies and organizations will be included in the service mapping exercise.
3. Collect information on all services provided by each participating entity, including eligibility criteria, funding sources/levels, service duration or intensity, and specific service content..
4. Display this information in several ways, including:
   - As a summary of the services provided by a given entity.
   - As a summary of the full range of services available across all local partners for a given function (e.g., job placement assistance)

5. Develop display templates like those illustrated below.

Sample Format for Inventory of Services for a Specific Partner

Activity	Funding Source	Eligibility Requirements	Service Intensity (hours) or Duration (weeks)	Delivered to Groups, Individuals, or Both
Application				
Assessment				
Basic Skills Testing				
Basic Skills Training				
Career Exploration				
Career Information				
Coaching and Customer Advocacy				
Computer Labs				
Customer Service Plans				
Customized Training				
Eligibility				
Focus Groups				
Individual Training Accounts				
Internships				
Job Clubs				
Job Fairs				
Job Leads				
Job Match Services				

– Sample Format for Inventory of Services Across

Services ↓ / Partner →	JTPA	ES	UI	Voc Rehab	Welfare	
Intake	x	x	x	x	x	
Orientation	x	x	x	x	x	
Job Leads	x	x		x	x	
Job Clubs	x	x		x	x	
Computer Lab		x				
Transportation Support	x			x	x	
Career Resources	x	x		x	x	
Job Seeking	x	x		x	x	
Career Exploration	x	x		x	x	
Child Care Support				x	x	
Referrals	x	x	x	x	x	
Assessment	x	x		x	x	
On-the-Job Training	x			x		
Pre-Employment Skills Workshops	x			x		
Life Skills Workshops				x	x	
Try-Out Employment				x		

Partners

Summary of How Used in Curriculum

In Module 2, you will use service mapping to become familiar with the services provided by different partners.